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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/733,438	12/11/2003	Ching Wen Winston Liu	14087 B	1823

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EXAMINER

EDGAR, RICHARD A

ART UNIT	PAPER NUMBER
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3745

DATE MAILED: 03/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/733,438	Applicant(s) LIU, CHING WEN WINSTON	
	Examiner Richard Edgar	Art Unit 3745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 December 2003 under 37 CFR § 1.53(b).
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 40 and 41 (see Fig. 4 and specification page 5, lines 5-10). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

Claim 5 is objected to because of the following informalities: the dependency of claim 5 should be changed to depend from claim 4 so that i.) claim 5 is not a substantial duplicate of claim 6, and ii.) "the outer arc portion" has antecedent basis. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent No. 4,776,761 (Diaz hereinafter) in view of United States Patent No. 1,508,086 (Crawford hereinafter).

Diaz discloses a ceiling fan comprising blades 22 mounted on hinge brackets 20 wherein the blades are positioned to have a pitch angle (col. 2, line 25) so that during rotation of the fan, by centrifugal force and the blade pitch, the blades will assume a generally radial position (Fig. 3) with respect to the fan's axis which extends generally along the hanger 12 direction.

Diaz shows a generally flat blade 22 and therefore not a blade having a leading edge angle and a trailing edge angle each formed between an edge tangent line and a horizontal plane, wherein the leading edge angle is smaller than the trailing edge angle.

Crawford shows in Figs. 1-3 a ceiling fan blade having a leading edge 4 with a flat edge arranged at about 30° with respect to the rotational plane of the ceiling fan, and a trailing edge 7 with a flat edge arranged at about 90° with respect to the rotational plane of the ceiling fan for the purpose of increasing the volume of air propelled.

Since Diaz shows a ceiling fan having blades arranged at a pitch, and Crawford show pitched blades which produce a large volume of air, it would have been obvious at

the time the invention was made to a person having ordinary skill in the art to modify the blades of the Diaz fan to be pitched as taught by Crawford, for the purpose of increasing the volume of air propelled.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent No. 4,776,761 (Diaz hereinafter) in view of United States Patent No. 1,508,086 (Crawford hereinafter) as applied to claim 1 above, and further in view of United States Patent No. 5,575,624 (Bogage hereinafter).

The modified Diaz (Diaz in view of Crawford) shows an optimally pitched ceiling fan blade which moves a large volume of air by having the leading edge at a smaller angle than the trailing edge, the angles being measured with respect to the edge tangent lines and the fan's rotational plane. The leading and trailing edges appear to be flat, and therefore don't have an arc.

Bogage show a ceiling fan blade 16 having leading and trailing edges which have an arc-shape (see Fig. 4) for the purpose of guiding the airflow along a smooth surface.

Since the modified Diaz shows a ceiling fan blade which guides airflow along the blade width, and Bogage teaches that the leading and trailing edges should be arc-shaped, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the leading and trailing edges of the modified Diaz to be arc-shaped, as taught by Bogage, for the purpose of guiding the airflow along a smooth surface.

Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent No. 4,776,761 (Diaz hereinafter) in view of United States Patent No. 1,508,086 (Crawford hereinafter) as applied to claim 1 above, and further in view of United States Patent Application Publication No. 2004/0009070 A1 (Bird hereinafter).

The modified Diaz (Diaz in view of Crawford) shows a ceiling fan blade having an optimum shape for propelling a large volume of air by shaping the blade in a particular configuration along the blade's width. However, neither of the references teaches the blade curved along the blade length.

Bird teaches a ceiling fan blade having a curved or bowed shape (see Fig. 1) along the blade length for the purpose of increasing the volume of air propelled by the fan.

Since the modified Diaz teaches to increase the volume of air propelled by the fan by shaping the blades, and Bird teaches to also shape the blades, but along the blade length for also increasing the volume of air propelled by the fan, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to further modify the Diaz ceiling fan blade to be curved along the blade length as taught by Bird for the purpose of increasing the volume of air propelled by the fan.

Cited Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 6,302,652 shows a propelling blade assembly curved along the blade length for increasing airflow.

U.S. Patent No. 4,892,460 shows a ceiling fan blade having an attachment on the trailing edge of the blade for increasing the trailing edge tangent angle with respect to the blade rotation plane.

U.S. Patent Application Publication No. 2003/0190234 A1 shows in Figs. 2A and 2B and Figs. 5A and 5B, a ceiling fan blade with a smaller leading edge tangent angle than a trailing edge tangent angle.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Edgar whose telephone number is (571) 272-4816. The examiner can normally be reached on Mon.-Thur. and alternate Fri., 7 am- 5 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look can be reached on (571) 272-4820. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 3745

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Richard Edgar
Examiner
Art Unit 3745

RE



EDWARD K. LOOK
SUPERVISORY PATENT EXAMINER
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3/27/05